REMARKS

A final Office Action was mailed in this case on April 21, 2004, in which pending claims 1-26 were rejected. In response thereto, the above amendments and remarks which follow are submitted together with a Request for Continued Examination.1/ Claims 1, 17 and 26 have been amended herein to recite that the method comprises contacting a virus with a composition consisting of a pharmaceutically acceptable carrier and a synergistic combination. Support for these amendments is found in the Specification at paragraphs [0052], [0055] and [0057]. Reexamination and reconsideration of the application, as amended, are requested.

A. Rejections under 35 U.S.C. § 103(a) addressed

1. Claims 1-6, 9-14, 16-23 and 25-26 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Yu et al.* (U.S. Pat. No. 5,385,938) in view of *Poli et al.* (Food Chemistry), *Wenniger* (International Cosmetic Ingredient Dictionary) and the Merck Index. This rejection is respectfully traversed.

Independent claim 1 as amended above recites

> A method for the prophylaxis of lesions in a mammal caused by a virus of the Herpesviridae or Poxviridae family, comprising topically applying a composition consisting of a pharmaceutically acceptable carrier and a synergistic combination, said combination consisting of a C1, a C2, or a C3 alcohol or a C2, C3, or C4 diol having a concentration of 0.2 to 13.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6, wherein said composition is applied during symptoms of pain, itching, burning, or tingling.

It is well known that the transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. Accordingly, the transitional phrase "consisting essentially of" requires that the composition contains a pharmaceutically acceptable carrier and a synergistic composition as set forth in claim 1, but excludes other ingredients.

1/ While this RCE filing implies a withdrawal of the appeal filed August 13, 2004, (MPEP § 1215.01), the Applicant expressly reserves the right to further prosecute the claims rejected in the final Office Action prior to amendment herein.

Further, the phrase "consisting of" in claim 1 clearly indicates that the synergistic combination contains only:

- a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 13.0% by volume in water, and
- a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6.

Thus, any element or ingredient other than a pharmaceutically acceptable carrier, a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 13.0% by volume in water and a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6 is excluded from the composition of claim 1. Independent claims 17 and 24 has been amended in a manner similar to that of claim 1 and therefore the above remarks apply equally to the amendments made to claims 17 and 24.

In contrast, *Yu* teaches a composition comprising two agents: an alpha hydroxyacid or alpha ketoacid and an amphoteric or pseudoamphoteric compound. The amphoteric or pseudoamphoteric compound is intentionally added to raise the pH of the composition in order to avoid skin irritation (see col. 4, lines 2-12). Specifically, *Yu* states that a 1 molar aqueous solution of glycolic acid has a pH of 1.9, but the pH of the composition changes to 3.0 or 3.2 when an amphoteric compound such as arginine or creatinine, respectively, is combined with the glycolic acid solution. Thus, in this example *Yu*'s active composition requires both an alpha hydroxyacid and an amphoteric compound. Therefore *Yu*'s composition contains an element, i.e., an amphoteric compound, which is specifically excluded from the elements allowed in the composition used in the method of claims 1-6, 9-14, 16-23 and 25-26.

Yu also describes a formulation containing specific alpha hydroxy acids which are therapeutically effective for certain skin disorders without utilizing an amphoteric system (col. 11, line 55-col. 12, line 2), and provides glycolic acid as an example of an effective alpha hydroxy acid. However, as discussed above, the pH of a glycolic acid solution that does not include an amphoteric compound is **1.9**, which is outside of the pH range of 2.45 to 4.6 as required in claim 1. Accordingly, this alternative composition disclosed by

Yu is also outside of the scope of method claims 1-6, 9-14, 16-23 and 25-26 as presently pending.

Since *Yu* does not teach or even suggest every element of the composition used in the method of the claims as presently pending, method claims 1-6, 9-14, 16-23 and 25-26 are not obvious in light *Yu* alone or in combination with the other cited references.

Next, the Examiner asserts that while *Yu* does not expressly teach that the glycolic acid containing topical composition is useful in the prophylaxis of lesions caused by *Herpesvirdae* viruses, *Poli* discloses that glycolic acid is virucidal against herpesvirus. Applicants respectfully disagree and assert that the combination of *Yu* and *Poli* does not render claims 1-6, 9-14, 16-23 and 25-26 obvious.

Poli describes a study to determine the *in vitro* antiviral activity of certain organic acids. *Poli* found that certain organic acids have antiviral activity proportional to the polarity of the molecule (page 255, last paragraph). However, *Poli* does not teach or suggest that the pH of the acid solution is critical for virucidal activity. Further, *Poli* does not teach or suggest a method the prophylaxis of lesions caused by a virus with a composition consisting of a pharmaceutical carrier and a synergistic combination consisting of a low concentration of a lower chain alcohol and an acid at a specific pH. Thus, even if there were a motivation to combine the *Poli* acids with the *Yu* composition, the combination would not teach the claimed method.

Next, the Examiner asserts that while *Yu* does not expressly teach that 1,3-butanediol is useful as a pharmaceutical vehicle, *Wenniger* teaches that 1,3-butanediol is useful as a solvent in numerous cosmetic marketed products. However, *Wenniger* adds nothing to *Yu* that would render methd claims 1-6, 9-14, 16-23 and 25-26 obvious. Even if there were a motivation to combine the references, the combination would not provide a method of inactivating viruses by contacting the virus with a composition consisting of a pharmaceutical carrier and a synergistic combination, said synergistic combination consisting of a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 12.5 or

3.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the composition to between 2.45 and 4.6.

Next, the Examiner asserts that while *Yu* does not expressly teach the composition having a specific pH of 2.45 and does not teach the concentration of glycolic acid in the composition as 0.6%, the Merck Index teaches that the pH of a 0.5% glycolic acid is 2.50. However, it is asserted that the inclusion of the Merck Index adds nothing to the above combination of references that would render method claims 1-6, 9-14, 16-23 and 25-26 obvious. As stated, the novel feature of the present invention is the synergistic combination **consisting of** a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 13.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the composition to between 2.45 and 4.6. That is, the inventors discovered that this novel synergistic combination can be used to prevent the formation of lesions caused by a virus when applied topically to the potential site of a lesion. Thus, the reliance on the Merck Index citation is weak at best and does not take into consideration the invention as a whole.

In summary, even if there were motivation to combine the above references, the combination still would not provide the novel methods of claims 1-6, 9-14, 16-23 and 25-26 as amended herein. Withdrawal of this rejection is respectfully requested.

2. Claims 1, 7-8, 15 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhatia et al.* (Indian J. Animal Sci.) in view of "Disinfectant Drugs" and *Remington*. The Examiner asserts that *Bhatia* teaches that 0.4N hydrochloric acid is effective in inactivating sheep pox virus, "Disinfectant Drugs" teachs isopropanol 15% or above is effective to disinfect contact lenses and *Remington* teaches isopropanol and ethanol are good pharmaceutical solvents. The Examiner asserts that it would be obvious one one of ordinary skill in the art to incorporate isopropanol with HCl in a method for the prophylaxis of lesions. This rejection is respectfully traversed.

First, presuming *arguendo* that the references show that the elements of the pending claims, the office Action presents no line of reasoning why the

artisan viewing only the collective teachings of the cited references would have found it obvious to selectively pick and choose various elements and/or concepts of the references to arrive at the claimed invention. The claimed invention, however, is clearly directed to method of using a unique, synergistic combination of elements for prophylaxis of a lesion caused by a virus. That is to say, the inventors do not claim that they have invented one or more new elements but have presented claims to a method of using a novel combination of elements. To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination, or the Examiner must present a convincing line of reasoning as to why persons skilled in the art would have found the claimed invention to have been obvious in light of the teachings of the references. It is noted that simplicity and hindsight are not proper criteria for resolving the issue of obviousness. Note *In re Horn*, 203 USPQ 969, 971 (CCPA 1979). There is just no motivation given to combine a references relating to disinfecting contact lenses with the other references making up the present rejection, and in particular with the *Bhatia* referernce.

It is further asserted that *Bhatia* and the combination of references cited do not teach the elements of the claimed invention. Rather, the purpose of *Bhatia* is to determine if hydrochloric acid will inactivate a goat-pox virus *in vitro* **prior** to contacting the acid with the goats' skin. *Bhatia* discloses a method of combining goat-pox virus with hydrochloric acid and incubating this suspension for a period of time (page 518, 2nd column, last paragraph). To determine if the virus is still active after incubation with acid, *Bhatia* injects the suspension under the goats' skin and watches for signs of pain at the injection site. Thus, the *Bhatia* composition is actually a mixture of the goat-pox virus and a concentrated acid. Further, *Bhatia* only demonstrates that acid kills a virus *in vitro*. *Bhatia* does not teach or suggest applying acid to the skin to prevent an inflammation or lesion caused by a virus of the *Herpesviridae* or *Poxviridae* family.

More importantly, *Bhatia* does not teach or suggest a method of inactivating a virus, comprising contacting said virus with a virucidally effective amount of a composition consisting of a pharmaceutical carrier and a

synergistic combination, said synergistic combination consisting o a C1, a C2, or a C3 alcohol or a C2, C3, or C4 diol having a concentration of 0.2 to 13.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6.

Further, it is asserted that the combination of *Bhatia,* "Disinfectant Drugs" and *Remington* would not render the method of claims 1 and 7-8 obvious. As an initial matter, there is no motivation to combine the reference, especially since Disinfectant Drugs" does not teach the application of the recited combination to the skin to prevent an inflammation or lesions caused by particular viruses. Rather, the reference relates to application to contact lenses.

Neither does *Remington* teach the motivation to combine these references. Rather, *Remington* only demonstrates that ethanol and isopropanol are good pharmaceutical solvents. Consequently, persons skilled in the art would not have been motivated or guided by "Disinfectant Drugs" or by *Remington* to arrive at the methods of the claimed invention. Accordingly, withdrawal of the rejection of claims 1 and 7-8 is respectfully requested.

B. Conclusions

All of the remarks in the final Office Action have been addressed, claims 1-26 are believed to be in condition for allowance, and such action is respectfully requested. This Amendment and Remarks is being submitted along with a Petition for a One Month Time Extension, a Request for Continued Examination, and the associated fees. Should any additional fees be due, the Examiner is authorized to charge any fee deficiency associated with this response to Deposit Account No. 50-1123. The Examiner is asked to kindly contact the undersigned by telephone should any outstanding issues remain.

C. Petition for 1-Month Extension of Time

While the Final Office Action was mailed April 210, 2004 in this case, a Notice of Appeal was filed August 13, 2004 allowing two months to October 13, 2004 in which to file an Appeal Brief or take other action. The undersigned hereby petitions for a 1-month extension from October 13, 2004

to November 13, 2004.

Please charge Deposit Account No. 50-1123, $450.00 which includes the small-entity RCE fee and 1-Month Extension Fee. Please charge Deposit Account No. 50-1123 any fee deficiency associated herewith.

Respectfully submitted,

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